

## ABSTRACT

A new method is provided for the repair of a Phase Shifter Mask. The phase shifter of the PSM has been created over the active surface of the mask as a pattern of phase shift material, the pattern of phase shift material comprises at least one faulty element. A layer of photoresist is deposited over the active surface of the mask. A backside exposure of the PSM is performed in order to define the pattern of the mask in the layer of photoresist. The layer of photoresist is developed and remains in place over the pattern of the mask, protecting the phase shifter of the mask during repairs of the PSM. Repairs of the mask are performed using Focused Ion Beam techniques for this repair. A plasma etch removes Ga stain from the surface of the quartz substrate. The developed layer of photoresist is then removed from the pattern of the PSM using a wet strip process.